Please!

**Turn OFF cell phones
and paging devices**

The Geographic Approach

Sneak peak at the 9.3
ArcGIS JavaScript APIs
&
ArcGIS Server REST API

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The Simple ArcGIS JSAPI Demo

http://localhost/ItCantGetAnyEasier.html

# ArcGIS Server 9.3

- Complete & Integrated server-based GIS
- Out-of-the-box applications and services
- Rich developer opportunities

Author Content

ArcGIS Desktop

Java

.NET

ArcGIS Server

Spatial Data Management

Visualization (Mapping)

Spatial Analysis

ArcGIS Desktop

ArcGIS Explorer

WebMap Applications

ArcGIS Mobile
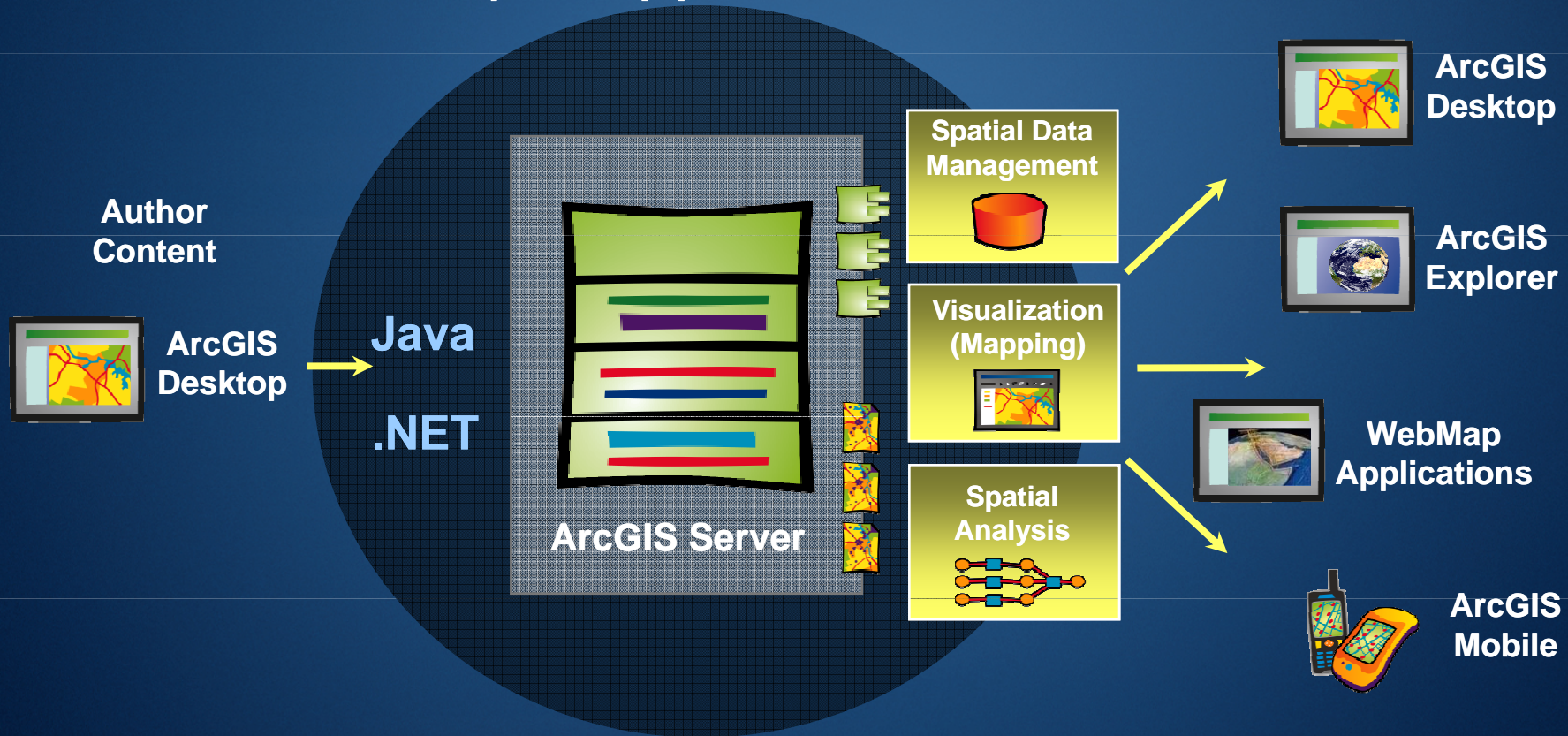
Publishing maps

- Publish high quality maps

- Support for Identify, Find, Select, Query, and other analysis

- Build cached map services

  - High performance map services

  - Tiles pre-rendered at fixed scales

  - Rapid display of static-base maps

  - Rich cartographic symbols
    with high performance
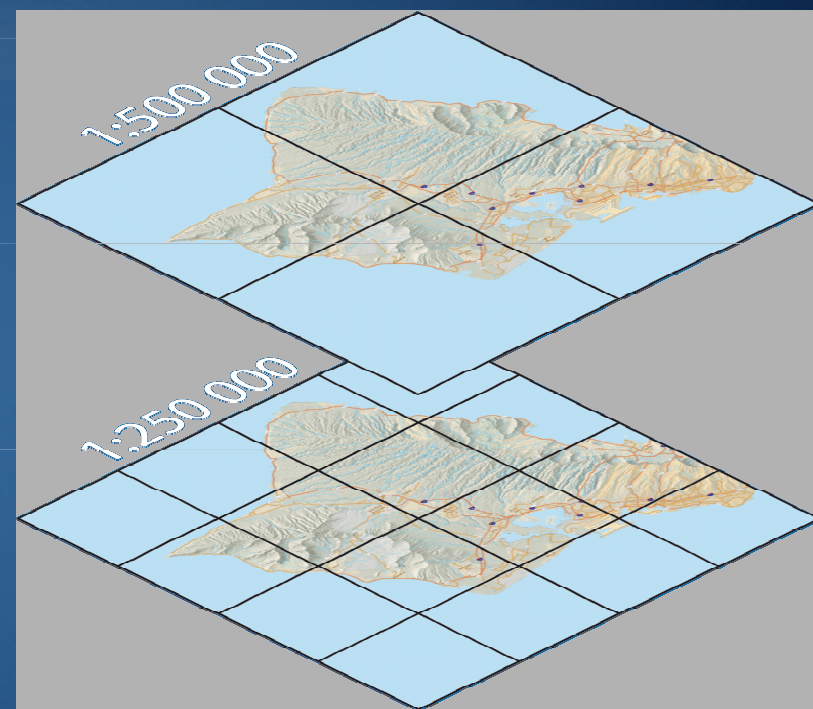
What is the Web ADF?

- Web Application Developer Framework is
  - An SDK for building GIS applications
  - A runtime for deploying GIS applications
- Built on the Microsoft .NET or Java framework
- Generic interface to a variety of GIS datasources

- Only way of making web applications at 9.2
  - Still supported and enhanced at 9.3
    - Full development platform
  - Javascript available to quickly plug maps/general spatial queries into a web site

Building Enterprise Mashups with ArcGIS Server

- Develop custom JavaScript applications that mashup ArcGIS services, Google Maps, and Microsoft Virtual Earth

- You can build ArcGIS Server Web applications using pure JavaScript APIs powered by backend REST services

- ArcGIS Server hosts a Services Explorer
  - Used by developer while building mashup application

- No development or deployment license is required on the Web server hosting your application

Why JavaScript?

- JavaScript is one of the most used languages in the world

- Pure client development

- Its not early 2000 any more
  – JS Frameworks abstract away the browser complexity

- Stability
  – No new changes in ECMAScript since 1999

- A path for HTML Viewer developers

ArcGIS JavaScript API

ArcGIS JavaScript API

- Embed maps and tasks from any ArcGIS Server into your website

- Use content provided by ESRI or use your own content as a basemap

- Map can be in any supported projection
  – This is a big advantage…

- Built on top of Dojo JavaScript toolkit
  – Graphics support, community, Dijits

ArcGIS JavaScript API

- Maps
  - Tiled
  - Dynamic

- Graphics (geometry + attributes + symbol + InfoWindow)

- Tasks
  - QueryTask
  - Locator
  - FindTask
  - IdentifyTask
  - Geoprocessor (synchronous or asynchronous)
    - As data or as map image

ArcGIS JavaScript API

- Online SDK
  - http://resources.esri.com/arcgisserver/apis/javascript/arcgis
  - Sample driven
  - Samples powered by an ArcGIS Server sample server
    - http://sampleserver1.arcgisonline.com/arcgis/rest/services
    - http://sampleserver2.arcgisonline.com/arcgis/rest/services

- JavaScript hosted by ESRI
  - http://serverapi.arcgisonline.com/jsapi/arcgis/?v=1
  - Flexible release cycle
  - Hosted by ArcGIS Online
    - 24/7

ArcGIS JavaScript API Applications

- Can be a very simple user application, but still provides sophisticated functionality
  - http://servery.esri.com/arcgisserver/apis/javascript/arcgis/demos/Geoprocessor/GPServiceArea.html

- Integrate with other Web 2.0 libraries
  - http://serverx.esri.com/ArcGISJavaScriptAPI/supertuesday.html
  - Google Charts

- GIS information and analysis
  - http://yeti2.esri.com/MailingList/demo_mailingList.html

ArcGIS JavaScript Extension for Virtual Earth

- Combine GIS content hosted in ArcGIS Server with content on top of Virtual Earth base maps.

- Works with backend ArcGIS Server services.

- Content (VE Shapes, Tiles) can be viewed in 2D or 3D

- Tiled Maps are in the WGS 1984 Web Mercator projection
  - WKID: 102113
  - Same as Google Maps

ArcGIS JavaScript Extension for Virtual Earth

- Online SDK
  - http://resources.esri.com/arcgisserver/apis/javascript/ve
  - Interactive SDK
  - Samples powered by an ArcGIS Server sample server
    - http://sampleserver1.arcgisonline.com/arcgis/rest/services
    - http://sampleserver2.arcgisonline.com/arcgis/rest/services

- JavaScript hosted by ESRI
  - http://serverapi.arcgisonline.com/jsapi/ve/?v=1
  - Flexible release cycle
  - Hosted by ArcGIS Online
    - 24/7

ArcGIS JS Extension for VE Applications

- Build Mashups with Virtual Earth

- Interact with your data on a VE base map

- Push GIS analysis to the general public

ArcGIS JavaScript Extension for the Google Maps API

- Combine GIS content hosted in ArcGIS Server with content on top of Google Maps base maps
  - Must have Google API key

- Works with backend ArcGIS Server services

- Query, geoprocessing, locating tasks available as well
  - Not just a map!

- Tiled Maps are in the WGS 1984 Web Mercator projection
  - WKID: 102113
  - Same as VE

ArcGIS JavaScript Extension for the Google Maps API

- Online SDK
    - http://resources.esri.com/arcgisserver/apis/javascript/gmaps
    - Sample driven, SDK is in Google Maps Style
    - Samples powered by an ArcGIS Server sample server
        - http://sampleserver1.arcgisonline.com/arcgis/rest
        - http://sampleserver2.arcgisonline.com/arcgis/rest

- JavaScript hosted by ESRI
    - http://serverapi.arcgisonline.com/jsapi/gmaps/?v=1
    - Flexible release cycle
    - Hosted by ArcGIS Online
        - 24/7

ArcGIS JavaScript Extension for the Google Maps API

- Build Mashups with Google Maps
  - http://servery.esri.com/arcgisserver/apis/javascript/gmaps/samples/queryTask/QueryTask_Portland.html

- Interact with GIS data on Google Maps base map
  - http://servery.esri.com/arcgisserver/apis/javascript/gmaps/samples/utilities/bufferTaskResults.html

- Push GIS analysis to the general public
  - http://servery.esri.com/javascript/gmaps/samples/geoprocessor/GP_ProfileFromRoute.html

REST API for ArcGIS Server

What is REST?

- Representational State Transfer

- Hierarchy of resources

- Wget, curl, Ruby, Python, Perl, Java, .NET, JavaScript, …
  - *Interoperable*

- Bookmark-able

- Requests to the REST API are through HTTP GETs
  - Eliminates cross-domain issues (HTTP Post) for most requests

- Browser is the new command line

ArcGIS Server 9.3 REST API

- Simple view of ArcGIS Server

- All GIS Services are exposed as resources
  - Service level metadata

- Some resources have operations
  - Map Service (export, find, identify)
  - Map Service Layers (query)
  - Image Services (export)
  - Geocode Service (findAddressCandidates, Reverse Geocode)
  - Geoprocessing (execute, submit job)
 - Geometry Service (project, simplify, and others*)

ArcGIS Server 9.3 REST API

- Resources and operations results can be returned as:

  – HTML (Services Explorer--default)

  – IMAGE (direct streamed image)

  – KML (Google Earth, Google Maps, Virtual Earth)

  – JSON (developers)
    - JavaScript Object Notation

Give me an example….

- Base Map URL:
  http://sampleserver1.arcgisonline.com/ArcGIS/rest/services/Petroleum/KGS_OilGasFields_Kansas/MapServer/
- Export operation
  baseUrl/export?bbox=-102,34.7,-94,42&f=image

Exports map based on query parameters specified in the URL
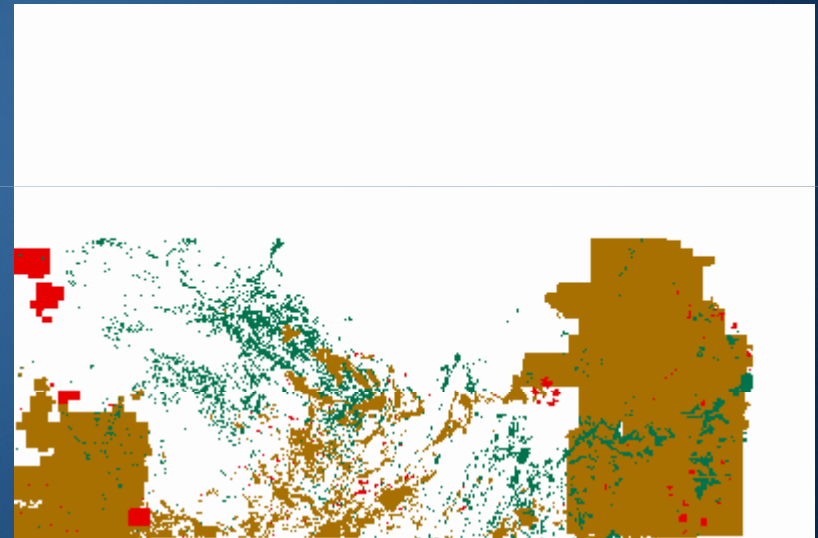
Other new 9.3 enhancments

- Improved Caching workflows
  - Cache on the fly
- WebADF improvements
  - Performance
    - Internal improvements/.Net AJAX
  - Out of the box printing

Questions?